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| 09/928,150 | 08/10/2001 | Jun-Hyeog Choi | 1462-P02622US0 | 7341 |

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| EXAMINER | |
|---|---|
| LEROUX, ETIENNE PIERRE | |
| **ART UNIT** | **PAPER NUMBER** |
| 2171 | 5 |

DATE MAILED: 06/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/928,150 | CHOI, JUN-HYEOG | |
| | Examiner | Art Unit | |
| | Etienne P LeRoux | 2171 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) 1-8 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-8 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 10 August 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

### *Specification*

The incorporation of essential material in the specification by reference to a foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same material incorporated by reference in the referencing application. See *In re Hawkins*, 486 F.2d 569, 179 USPQ 157 (CCPA 1973); *In re Hawkins*, 486 F.2d 579, 179 USPQ 163 (CCPA 1973); and *In re Hawkins*, 486 F.2d 577, 179 USPQ 167 (CCPA 1973).

### *Claim Objections*

Claim 1 is objected to because of the following informalities: The acronym SOM must be spelled out in its entirety in the first instance. Appropriate correction is required.

Claims 7 and 8 include K-means and K-number. The acronym K must be spelled out in its entirety in the first instance.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 includes "query word" and "keyword." One of ordinary skill in the art would not be able to make and use the invention because the difference between above words is not clear. For purposes of this examination, it is assumed that above can be used interchangeably.

Claim 1 recites "a third step of calculating an entropy value between keywords of each web document and said query word and user profile." One of ordinary skill in the art would not be able to make the use the invention because the step of calculating an entropy value is not supported in the specification. Furthermore, one of ordinary skill in the art would not be able to calculate entropy with regard to user profile as user profile typically includes personal details such as address.

Claim 1 recites "a fourth step of collecting data and judging whether data for learning Kohenen neural network is sufficient or not." One of ordinary skill in the art would not be able to make and use the invention because the method of collecting data is not clear from the specification. In particular, how is the data of step four related to the data of steps 1 through three. Furthermore, the criterion for judging sufficiency is not clear from the specification. Still further, the method of developing a Kohenen neural network is not clearly defined in the specification.

Claim 1 recites "a fifth step of ensuring a number of documents using a bootstrap algorithm statistical technique, if it is determined in said fourth step that said data for learning

Kohonen neural network is not sufficient." Ensuring a number of documents is not clearly defined in the specification. Furthermore, the method of using the bootstrap algorithm is not explained in the specification. Still further, what is the point of step five? What happens after step five?

Claim 1 in step six recites the "Kohonen neural network and Bayesian learning are coupled to one another." The method of coupling is not ascertainable from the specification.

Claim 1 recites "a seventh step of performing real-time document clustering for relevant documents of said plurality of web documents using said entropy value calculated in said third step and Bayesian SOM neural network model." The method of clustering using the entropy value and the Bayesian SOM neural network model is not clearly defined in the specification.

Claim 7 includes "a relevant document," "a nearest document cluster," "a document." One of ordinary skill in the art would not be able to make and use the invention because above elements are not sufficiently supported in the specification.

Claim 8 recites "a first step of dividing the entire document into K-number of initial document clusters." One of ordinary skill in the art would not be able to divide a document into clusters.

Claim 8 recites "a second step of allocating a new document into a document cluster having a centroid which allows shortest distance from each document." One of ordinary skill in the art would not be able to make and use the invention based on the lack of definition in the specification of a new document and a centroid defined with respect each document.

Claim 8 recites "a third step of repeating said second step of allocating until re-allocation stops." One of ordinary skill in the art would not be able to make and use the invention based on the lack of definition in the specification of allocating and re-allocation.

Claim 8 recites "wherein said K-number of initial document clusters is determined randomly in said step of dividing the entire document." One of ordinary skill in the art would not be able to make and use the invention based on the lack of definition in the specification of K-number of initial; document clusters, random determining and the means of dividing the entire document.

Claim 8 recites "said centroid of said document cluster receiving said new document has a new value changed from a previous value in said step of allocating a new document, and said repeating step utilizes a seed point if said entire document is divided into random K-number of initial clusters in said step of dividing entire document." One of ordinary skill in the art would not be able to make and use the invention based on the lack of definition in the specification of a new value, a previous value, a new document, the repeating step, a seed point, if the document is divided into initial clusters and a step of dividing the entire document.

Claims 2-6 are rejected for being dependent from a rejected base claim.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No 6,131,082 issued to Hargrave et al (hereafter Hargrave) in view of US Pat No 6,636,862 issued to Lundahl et al (hereafter Lundahl and further in view of Conference Paper: Using Neural Networks for Modeling the Input Requirements of Electronic Medical Record Systems: presented by Susan E Spenceley et al (hereafter Spenceley) and further in view of US Pat No 6,498,993 issued to Chen et al (hereafter Chen) as best examiner is able to ascertain.

Claim 1:

Hargrave discloses:

- a first step of recording a query word by a user [source language text string, col 3, lines 47-67];
- a second step of designing a user profile made up of keywords used for most recent search and frequencies of the keywords, so as to reflect user's preference [aligned file, col 3, lines 47-67];
- a third step of calculating an entropy value between keywords of each web document and said query word and user profile [entropy weight value, col 3, lines 47-67];

Hargrave fails to disclose web documents. Lundahl disclose web documents [col 9, lines 28-43]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hargrave to include web documents as taught by Lundahl.

The ordinarily skilled artisan would have been motivated to modify Hargrave per the above for the purpose of using information available on the Internet.

Regarding the fourth step, Hargrave fails to disclose collecting data and judging whether data for learning Kohonen neural network is sufficient or not. Spenceley discloses collecting data and judging whether data for learning Kohonen neural network is sufficient or not [Figs 3-5]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hargrave to include collecting data and judging whether data for learning Kohonen neural network is sufficient or not as taught by Spenceley. The ordinarily skilled artisan would have been motivated to modify Hargrave per the above for the purpose of investigating the predictive power of the probability model [Spenceley, Section 6: Results and Discussion].

Regarding the fifth step, Hargrave fails to disclose ensuring a number of documents using a bootstrap algorithm statistical technique, if it is determined that said data for learning Kohonen neural network is not sufficient. Chen discloses a bootstrap algorithm [col 4, lines 12-31] and Spenceley discloses a Kohonen network. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hargrave to include data for learning Kohonen neural network is not sufficient for ensuring a number of documents using a bootstrap algorithm statistical technique as taught by Chen and Spenceley. The ordinarily skilled artisan would have been motivated to modify Hargrave per the above for the purpose investigating the sample characteristics to ensure that accurate results are obtained.

Regarding the sixth step, Hargrave fails to disclose determining prior information to be used as an initial value for each of a network parameter through Bayesian learning, and determining an initial connection weight value of Bayesian SOM neural network model where said Kohonen neural network and Bayesian learning are coupled to one another. Spenceley discloses determining prior information to be used as an initial value for each of a network parameter through Bayesian learning, and determining an initial connection weight value of Bayesian SOM neural network model where said Kohonen neural network and Bayesian learning are coupled to one another [Section 2: Modeling User Input Requirements]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hargrave to include determining prior information to be used as an initial value for each of a network parameter through Bayesian learning, and determining an initial connection weight value of Bayesian SOM neural network model where said Kohonen neural network and Bayesian learning are coupled to one another as taught by Spenceley. The ordinarily skilled artisan would have been motivated to modify Hargrave per the above for the purpose of investigating improved predictive power [Spenceley, Abstract]

Regarding the seventh step, Hargrave discloses using said entropy value calculated in said third step [entropy weight value, col 3, lines 47-67] but fails to disclose performing real-time document clustering for relevant documents of said plurality of web documents and Bayesian SOM neural network model. Spenceley discloses performing real-time document clustering for relevant documents of said plurality of web documents and Bayesian SOM neural network model [Section 2: Modeling user input requirements]. It would have been

obvious to one of ordinary skill in the art at the time the invention was made to modify Hargrave to include performing real-time document clustering for relevant documents of said plurality of web documents and Bayesian SOM neural network model as taught by Spenceley. The ordinarily skilled artisan would have been motivated to modify Hargrave per the above for the purpose of investigating improved predictive power [Spenceley, Abstract]

Claim 2:

The combination of Hargrave, Lundahl, Spenceley and Chen discloses the elements of claim 1 as noted above. The combination of Hargrave, Lundahl, Spenceley and Chen discloses wherein said seventh step of performing document clustering further comprises the step of calculating entropy value between keywords of each web document and query word given by a user and user profile, and determining a clustering variable [Hargrave entropy weight value, col 3, lines 47-67].

Claim 4:

The combination of Hargrave, Lundahl, Spenceley and Chen discloses the elements of claim 1 as noted above. The combination of Hargrave, Lundahl, Spenceley and Chen fails to disclose wherein said number of documents to be ensured by said bootstrap algorithm is fifty. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify combination of Hargrave, Lundahl, Spenceley and Chen to include the bootstrap algorithm is fifty. The ordinarily skilled artisan would have been motivated to modify the combination of Hargrave, Lundahl, Spenceley and Chen per the above for the purpose of

including a large population to ensure accurate determining of a probability of breaking [Chen , col 4, lines 12-32].

Claim 5:

The combination of Hargrave, Lundahl, Spenceley and Chen discloses the elements of claim 1 as noted above. The combination of Hargrave, Lundahl, Spenceley and Chen discloses wherein said document clustering is performed by an average clustering method [Spenceley: Section 2: Modeling User Input Requirements].

Claim 6:

The combination of Hargrave, Lundahl, Spenceley and Chen discloses the elements of claim 1 as noted above. The combination of Hargrave, Lundahl, Spenceley and Chen discloses wherein said document clustering is performed by an approach utilizing a distance of statistical similarity or dissimilarity [Spenceley: abstract].

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hargrave, Lundahl, Spenceley and Chen and further in view of US Pat No 6,421,467 issued to Mitra.

Claim 3:

The combination of Hargrave, Lundahl, Spenceley and Chen discloses the elements of claim 1 as noted above. The combination of Hargrave, Lundahl, Spenceley and Chen fails to

disclose wherein said prior information determined in advance in said sixth step of determination is in the form of a probability distribution, and said network parameter has a Gaussian distribution. Mitra discloses wherein said prior information determined in advance in said step of determination is in the form of a probability distribution, and said network parameter has a Gaussian distribution [Abstract]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Hargrave, Lundahl, Spenceley and Chen to include wherein said prior information determined in advance in said sixth step of determination is in the form of a probability distribution, and said network parameter has a Gaussian distribution as taught by Mitra. The ordinarily skilled artisan would have been motivated to modify the combination of Hargrave, Lundahl, Spenceley and Chen for the purpose of providing statistical analysis [Mitra, Abstract].

### *Art Rejection Excluded*

Due to the plurality of rejections under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement, an art rejection of claims 7 and 8 is not provided in this first Office Action.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne LeRoux whose telephone number is (703) 305-0620. The examiner can normally be reached on Monday – Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic, can be reached on (703) 308-1436.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Patent related correspondence can be forwarded via the following FAX number (703) 872-9306

Etienne LeRoux

June 18, 2004